

Remarks

Applicants have not amended any of the claims in this Response. Accordingly, claims 1, 7, 11 to 14, 19 to 21, 25 to 27, 29, 33 to 34, 37, and 41 to 44 remain pending in this patent application. Applicants concurrently request continued examination of this patent application and address each and every one of the points raised in the above-identified Advisory Action and Office Action, as follows:

I. Withdrawal of Claim Rejections

Applicants acknowledge with appreciation the Examiner's withdrawal of the claim rejections as noted on Page 3 of the above-identified Office action.

II. Rejection of Claims Under Section 103 based on GB654 and EP125

The rejection of claims 1 to 4, 7, 11, 12, 14 and 19 to 21 under 35 U.S.C. §103 as being allegedly unpatentable over GB654 in view of EP125 has been maintained in this Office action. Applicants maintain the position that the rejection based on this combination of references is not proper, or alternatively the references do not render the claimed subject matter obvious, for the following reasons:

A. While GB654 discloses cemented carbide construction, it fails to disclose a carbide construction where the binder comprises from 10 to 30 percent by weight of the construction. Specifically, GB654 discloses that the binder comprises *no more than 9 percent by weight* of the construction. The Examiner asserts that 9 percent by weight is "close enough" to Applicants' claimed range of 10 to 30 percent by weight so that one having ordinary skill in the art would expect the same results. Further, in the Advisory Action the Examiner asserts that GB654 does not disclose that using an amount of binder beyond 9 percent would destroy the invention.

Applicants do not agree with this simplistic and unsupported conclusion for the following reasons. First, GB654 is concerned with controlling, specifically

minimizing, grain growth and has found that this occurs by *limiting the amount of binder* that is used to make the construction. GD654 expressly discloses that the invention (limiting unwanted grain growth in the construction) is based on having the binder material present in low concentration (page 2, column 1, lines 7 to 11). Contrary to the Examiner's assertion, Applicants submit that this expressed disclosure in GD654 essentially teaches one skilled in the art not to use any more than 9 percent of the binder material to realize the invention. Thus, such a low concentration of the binder material is critical to realizing the invention.

Thus, one having ordinary skill in the art aware of GB654 and its teachings would not be motivated or derive any suggestion to use any more of the binder alloy than as disclosed therein as this would be contrary to the intent and purpose of GB654. Further, GB654 fails to disclose or remotely suggest the combination of different materials in forming the binder with the specific purpose of more closely matching the coefficient of thermal expansion (CTE) of the WC grains. This is a novel and nonobvious discovery made by Applicants.

B. Further, GB654 fails to disclose or suggest the use of Mn in addition to the binder ingredients disclosed therein. In this regard, the Examiner relies on EP125. GB654 is focused on developing a carbide composition having high abrasion resistance. EP125 is focused on developing a carbide composition having enhanced wear resistance through surface hardening, and based on this the Examiner submits that the two references are properly combinable.

EP125 discloses making a cemented carbide using Mn (inter alia) as a *replacement to conventional cemented carbide comprising Co*. EP125 discloses that Mn can be used to promote formation of a hardened surface through strain induced partial phase transformation. *EP125 intentionally avoids the use of cobalt to make its carbide composition*, and discloses that the resulting carbide composition (formed without using cobalt) has higher overall toughness when compared to those having a conventional cobalt matrix.

In view thereof, Applicants, submit that EP125 teaches away from the concept of using cobalt to form its cemented carbide and, for this reason one having ordinary skill in the art aware of EP125 would actually not consider combining the alloying elements disclosed therein (namely, manganese) with the alloying elements of GB654 that includes cobalt, as this would be counter to the teaching and intended purpose of EP125.

For all the reasons presented above, Applicants submit that one having ordinary skill in the art would not be motivated to selectively take Mn from EP125 and then add it to the composition of GB654, and further if they did they would still not arrive at Applicants' cermet composition as recited in the independent claims, comprising both the amount of the binder material and the CTE parameter. Applicants submit that these claim features are unique to its intended purpose of developing a special binder alloy that is aimed at producing a cermet construction having a desired CTE parameter, which purpose and result is neither disclosed nor suggested by the noted references, i.e., this is a new and unobvious discovery and invention made by Applicants.

In view of the above, Applicants submit that its cermet construction as recited in independent claims 1 and 14 is not obvious based on the combination of GB654 and EP125, and respectfully request that the rejection of these claims and the claims depending therefrom under 35 U.S.C. §103 be reconsidered and withdrawn.

III. Rejection of Claims Under Section 103 based on GB654, EP125, GB301, Liang or Fang

The rejection of claims 13, 33, 34, 37, 41 and 42 under 35 U.S.C. §103 as being allegedly unpatentable over GB654 in view of EP125, GB301, or Liang or Fang has been maintained in this Office action. Applicants submit that the subject matter recited in claim 13 is not obvious over the noted combination of

references for the same reasons presented above in Section II as they relate to independent claim 1.

Independent claim 33 also includes claim features present in independent claim 1, and for this reason submit that independent claim 33 is not rendered obvious over the noted combination of references for the same reasons presented above in Section II.

In view of the above, Applicants submit that its cermet construction as recited in independent claims 1 and 33 is not obvious based on the noted combination of references, and respectfully request that the rejection of these claims and the claims depending therefrom under 35 U.S.C. §103 be reconsidered and withdrawn.

IV. Rejection of Claims Under Section 103 based on GB654, EP125, Liang, or Fang

Claims 25 to 27, and 29 have been rejected under 35 U.S.C. §103 as being allegedly unpatentable over GB654 in view of EP125, Liang, or Fang. The Examiner notes that this rejection had been presented in the Office action of October 1, 2007, but this is not the case. The rejection in that Office action of these particular claims did not include Liang as a cited basis for rejection.

Independent claim 25 includes claim features present in independent claim 1, and for this reason Applicants submit that such independent claim is not rendered obvious over the noted combination of references for the same reasons presented above in Section II.

In view of the above, Applicants submit that its cermet construction as recited in independent claim 25 is not obvious based on the noted combination of references, and respectfully request that the rejection of this claim and the claims depending therefrom under 35 U.S.C. §103 be reconsidered and withdrawn.

V. Rejection of Claims Under Section 103 based on Fang, in view of EP125 and Hale

Claims 43 and 44 have been rejected under 35 U.S.C. §103 as allegedly being unpatentable based on Fang in view of EP125 and Hale. Independent claim 43 includes claim features present in independent claim 1, and for this reason Applicants submit that independent claim is not rendered obvious over the noted combination of references for the same reasons presented above in Section II.

Further, none of the cited references disclose or suggest the claim feature recited in independent claim 43 that the cores within the composition be arranged having a common orientation.

In view of the above, Applicants submit that its cermet construction as recited in independent claim 43 is not obvious based on the combination of Fang, EP125 and Hale, and respectfully request that the rejection of this claim and claim 44 depending therefrom under 35 U.S.C. §103 be reconsidered and withdrawn.


X. Conclusion

For the reasons presented above, Applicants respectfully request that the rejections of the claims under 35 U.S.C. §103 be reconsidered and withdrawn, and that claims 1, 7, 11 to 14, 19 to 21, 25 to 27, 29, 33 to 34, 37, and 41 to 44 pending in this patent application be passed to allowance. Should the Examiner evaluate this Response and conclude that the claims are not properly allowable, Applicants request that the Examiner please call its below-identified patent attorney to discuss options that may be implemented to facilitate allowance.

The proceedings herein are for a patent application and the provisions of 37 C.F.R. 1.136 apply. The Commissioner is authorized to charge any underpayment or overpayment of fees due, including extension of time fees, to Deposit Account No. 50-3683.

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Respectfully submitted,



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